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ABSTRACT

Biological sex, social area, task area, and psychological sex were used as independent variables when 72 high school students in speech communication classes rated themselves and other members of small discussion groups. The results for males, females, and composite groups revealed that psychological sex was a more significant discriminating variable than biological sex for dimensions of interpersonal attraction, communication behavior variables, and determining who contributed more to the communication task climate. Participants who indicated that they contributed more to the social climate made more social-emotional positive comments. Similarly, participants who indicated that they contributed more to the task made more task-asking and task-giving comments. Other results showed that androgynous subjects were rated higher on task attraction, contributed more to the discussions, and gave more task-giving, task-asking, and social-emotional positive comments. (Author/RL)

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An Investigation of Sex Roles, Dimensions of Interpersonal Attraction and Communication Behavior In a Small Group Communication Exercise

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Traditional sex role stereotypes indicate that males are aggressive, dominant, independent, unemotional, and task-oriented, whereas females are passive, submissive, need security, express tender feelings, and are person-oriented.[1] In 1943 Strong pointed out that traditional sex roles exist from the adolescent years to middle age.[2] More recently, Block suggested that parents of boys were more interested in the task-oriented achievements of their sons, whereas parents of girls were more interested in the interpersonal trust of their daughters.[3] This study cross-validated the findings of Carlson's study in which the self-images of men were represented in impersonal, individualistic terms while the self-images of women were represented in interpersonal terms.[4]

In earlier research Bennet and Cohen reported overlap in the self-concepts of male and female college students which suggested that sex-role stereotypes may not have a major influence in the individuals' self-concepts.[5] Rosenkrantz, et al., however, concluded that male stereotypic traits included aggressiveness, independence, logic, adventurousness, self-confidence, and unemotionalism. Female stereotypic traits, on the other hand, included a strong need for security, expression of tender feelings, awareness of feelings of others, tactfulness, and gentleness. The results of their study supported the following assertions: (1) both college males and females clearly defined and held sex role stereotypes, (2) females held negative values of their worth in relation to the worth of males, and (3) a greater number of the characteristics and behaviors stereotypically associated with the male were more socially desirable than those associated with the female.[6] Based on the research which included Barry, Bacon and Child,[7] Rabban,[8] and Hartley,[9] Rosenkrantz, et al. concluded that "presumably, then, the trends in today's

society toward small families, white collars, increased education of women and increased participation of women in economic activities all tent to accelerate the rate of change in acceptable sex-role behaviors."[10]

Seder found that when research compared men and women from the same profession, sex differences in terms of interest were indistinguishable. That is, men and women had the same likes and dislikes.[11] The research, however, did not determine if males and females viewed non-professional oriented roles and professional roles in similar fashion in direct communication situations.

Although the above research asked parents to make judgments about their children or asked male and female subjects to make value judgments about their own sex and about the opposite sex, none of the research was based on between sex communication situations. Rather than having males and females engage in communication and then rate their feelings toward themselves and their partners, the studies called for information from past experiences. Research reported by Hare, Borgotta and Bales[12] and Bales[13] indicated in direct communication situations males tended to be more task-oriented and females more social-oriented. These findings added support to the concept of sex-role stereotypes. In addition, Loomis concluded that women evaluated themselves as social-oriented and men as task-oriented.[14] Wiley indicated that mixed-sex dyadic interaction seemed to imply a cross-sex reinforcement of traditional roles as women in mixed-sex dyads were more cooperative than women in same-sex dyads.[15] A recent study by Hilpert, et al., however, revealed no significant differences existed between mixed-sex dyads on who contributed more to the feeling of trust. In contrast, males selected themselves and their partners with almost equal frequency as to who contri-

buted more to the decision, while females, on the other hand, indicated that males contributed more to the decision. Females, likewise, indicated that their partners talked more. The results of the females' ratings reinforced the stereotype of the males as task oriented.[16]

Although an abundance of experimental and survey research has been completed on sex roles during the past forty years, social scientists have developed a renewed interest in the topic. In 1971 Bem[17] challenged whether gender appropriate sex roles enhance psychological and social adjustment. Based on a review of sex role literature, she indicated that most past investigations have concluded that males are task-oriented and females are social-oriented or that "mature women equals immature adults." Her search revealed that certain research supports her basic contention. Studies of femininity consistently reveal that sex-typing is related to poorer adjustment in girls and women.[18] Studies by Mussen[19] and Harford[20] also found that high masculinity led to poorer adjustment in adult men. Mussen's study further indicated high masculinity to be beneficial to adolescent males but a hardship in adult years.

Bem[21] also challenged the reliability and validity of past sex role inventory instruments. She theorized that masculinity and femininity are independent dimensions rather than opposite ends of a single dimension (a bipolar, unidimensional concept), that both dimensions (males and female) are characterized by their own unique set of positively valued attributes, and, finally, that masculinity and femininity are measured by using separate scales which are logically and empirically independent.

In order to test the psychological sex role theory, Bem developed the Bem Sex Role Inventory (BSRI).[22] The instrument consists of three dimensions: masculinity, femininity, and social desirability. Participants who are a blend of male and female characteristics are termed androgynous. Androgyny literally means man-woman and is taken from the Greek words "andro" meaning males and "gyn" meaning female.

Since the development of the BSRI, several investigations have been completed to test the androgynous construct. Bem hypothesized that sex-typed individuals will be consistent across a variety of situations to maintain an internalized sex-type image. Androgynous people, on the other hand, will be inconsistent, varying behavior based on the situation and perceiving freedom as the hallmark of mental health. In five studies completed by Bem, androgynous men and women behaved similarly in the same situation while sex-tuped or sex-reversed peers displayed traditional sex-role stereotypes.[23]

Other research using the BSRI also revealed androgynous individuals behaved differently than other psychological sex-types. The Eman and Morse study confirmed that androgynous individuals expressed higher degrees of self-esteem, self-acceptance and acceptance of others than groups of masculine, feminine or undifferentiated identified individuals.[24] Greenblatt, Hasenauer and Freimuth's study revealed that psychological sex type is a more precise predictor than biological sex.[25] That is, psychologically feminine and androgynous individuals disclose more information about themselves and are psychologically more healthy than masculine or un-differentiated individuals. In addition, the study revealed that androgynous subjects experience less speech apprehension than traditional sex-typed

people. Montgomery and Burgoon's study also supported Bem's theory.[26] In all of the above studies, psychological sex was a better predictor than biological sex. By using the psychological sex as an independent variable, within group variance is decreased and between group variance is increased. This will increase the reliability and validity of sex-role research.

Sex role research also can utilize the instrument on interpersonal attraction developed by McCroskey and McCain. The fifteen item instrument uses interval data to evaluate three dimensions of interpersonal attraction: physical, social and task. Factor analysis was used to determine what statements under each area wer unidimensional in judging the concept.[27]

Research by Lashbrook determined that task attraction is a key variable in judging leadership ability.[28] Other research by McCroskey, et al. revealed communication apprehensives are perceived as less interpersonally attractive than low communication apprehensives.[29]

In this study these unidimensional statements were used to rate partners in a small group situation. A group situation of five to six subjects was used to avoid the pressure that only two participants might feel to contribute. As Hilpert, et al. indicated, "In a discussion involving more participants it might well be that greater efforts are needed to create a sense of friendship among all members, since the opportunity to participate quite likely would be less automatic than the turn taking pattern which emerges in dyads."[30] The McCroskey and McCain instrument was used in this study for several reasons. First, past research has asked subjects to rate interpersonal attraction in terms of friendship. Second, the researchers wanted to determine differences among groups in rating various psychological sex partners and to determine whether a participant's own psychological sex

is a factor in rating partners of the same and different psychological sex.

Research Questions

1. Will there be differences between males and females in rating whether self or other member in the group contributed more to the social climate of the group and whether self or other members contributed more to the task of the group?

2. Will there be significant within group differences in rating social and task areas?

3. Will there be differences (a) among females from various psychological sex groups, (b) among males from various psychological sex groups, and (c) the combined psychological sex groups in rating who contributed more to the social climate of the group and the task of the group?

4. Will members (male, female, composite) of the same psychological sex (a) prefer to work on a problem solving task with a member of the same psychological sex and (b) prefer to socialize with members of the same psychological sex?

5. Will there be significant differences between the means of males and females in rating other group members on three dimensions of interpersonal attraction?

6. Will there be significant differences between the means of males and females in types and total comments during a group discussion?

7. Will there be significant differences between the means for individuals who rated self as contributing more to the social climate than those who rated others as contributing more to the social climate in rating members on three dimensions of interpersonal attraction and individuals' communication behaviors?

8. Will there be significant differences between the means for individuals who rated self as contributing more to the task climate than those who rated others as contributing more to the task climate in members on the three dimensions of interpersonal attraction and individual communication behaviors?

9. Will there be an interaction effect between social and task variables in rating dimensions of interpersonal attraction and communication behaviors?

10. Do members of the same psychological sex rate other group members of the same psychological sex higher on dimensions of interpersonal attraction than members of different psychological sexes?

11. Do members of different psychological sexes rate members of the same psychological sex higher on dimensions of interpersonal attraction than members of other psychological sex groups?

12. Will there be an interaction effect between the levels of same psychological sex and levels of different psychological sex in rating interpersonal attraction variables?

13. Will there be significant differences among the means of various psychological sex groups (androgynous, masculine, feminine, and undifferentiated) in types and total comments made during a group discussion?

Procedures

Subjects were seventy-two students enrolled in three small group communication classes in a midwest senior high school. During the second week of the trimester, the Bem Sex Role Inventory (see Appendix A) was administered to the subjects. Based on the psychological sex, the researchers created thirteen within class groups of five or six subjects per group. The groups included masculine-androgynous, masculine-feminine, masculine-undifferentiated, feminine-androgynous, feminine-undifferentiated and androgynous-undifferentiated. During the tenth week of the trimester subjects were placed in the designated groups according to psychological sex. Several changes were made due to the problem of daily absences. Subjects were given the hypothetical situation in which their task was to decide which five people should leave the bomb shelter (see Appendix B). In past classes the activity had elicited active group participation. Previous to the task, the subjects had heard mini-lectures and had participated in discussions on perception and self-perception and had participated in various problem-solving and decision making group activities with other members of the class. Since the instructor often created the groups for the activities, subjects were not aware that for this activity the groupings were based on psychological sex. The activity was viewed as another communi-

cation situation in which they would have the opportunity to share personal opinions about their decisions. Previous to the group activity, subjects wrote down their individual ranking of the five people who would stay in the shelter. Subjects were then placed in groups and had thirty-five minutes to discuss the situation and to reach a group decision as to who would stay in the shelter.

The subjects were told that since four or five groups were discussing at the same time and the instructor could not observe all of them, the groups would be audio-taped so that the instructor could listen to the tapes later and complete the individual feedback forms more accurately. Later the researchers analyzed the interactions on the tapes in terms of the types of categories developed by Bales.[31] The categories included (1) social-emotional area: positive reactions - shows solidarity, tension release, agrees; (2) social-emotional area: negative reactions-withholds help, show tension, withdraws, shows antagonism; (3) task area: attempted answers - gives suggestions, opinion, information, orientation and (4) task area: questions - asks for opinion, suggestion, information, orientation (see Appendix C). These categories were selected because they are used throughout the trimester by student observers to help other students realize how they function in a group.

Following the activity, subjects broke away from their groups and were asked to fill out a two part questionnaire for each of the other members of the group (see Appendix D). Subjects were encouraged to be frank on their responses as only the instructor would see these feedback forms. Subjects were told that the purpose of the form would be explained the following day

after they had been completed and turned in to the instructor.

Instruments

Questionnaire

The questionnaire consisted of two questions from Hilpert et al.[32] about who contributed more to the feeling of trust and to the solution and of McCroskey and McCain's instrument of interpersonal attraction.[33] McCroskey and McCain's instrument consists of three dimensions of interpersonal attraction: physical, social and task. Factor analysis was used to determine the unidimensional items for each dimension. McCroskey and McCain completed a follow up principle component analysis with varimax rotation, and items were checked for internal validity by means of the Hoyt procedure on analysis of variance. From their research the instrument appears to be reliable and valid. Only the unidimensional items of the instrument were used to determine attitude toward partners in this study. Filler items were used to mask the wanted data. Students were also asked to indicate the member of the class with whom they would most like to work on a task and the student with whom they would most like to socialize.

Bem Six Role Inventory

The BSRI consists of 60 personality characteristics; 20 masculine items, 20 feminine items and 20 social desirability items. Initially, Bem and her students selected 200 items that were masculine or feminine in tone and 200 additional items that seemed to be neither masculine or feminine in tone. Next, the 400 adjectives were submitted to 100 judges, 50 males and 50 females. The judges used a seven point scale to rate the items, ranging from one ("not at all desirable") to seven ("extremely desirable"). An item qualified as masculine or feminine if it was rated by both males and females as significantly

more desirable for a specific sex. Through this procedure, 20 items were selected for the Masculinity Scale and 20 were selected for the Femininity Scale. An item qualified as socially desirable if it was rated as no more desirable for either sex by both male and female judges.

Next, students were asked to rate each item from one to seve, one ("never true of me") and seven ("always true of me"). Then scores were added for each of the three dimensions. Two different methods can be used to determine the psychological sex types of subjects. In this study, the medians were used to determine whether a person was classified as androgynous, masculine, feminine or undifferentiated. To increase the rigor of clarifying students, other scores from college data were used so that member androgynous, etc., the medians were 98 in masculine items and 96 on feminine items, even though there were 252 completed forms on interpersonal attraction dimensions. The following operational definitions were used:

Androgynous - both masculine and feminine scores above the median
Feminine - feminine scores above the median
Masculine - masculine scores above the median
Undifferentiated - both masculine and feminine scores below the median

Bem reports careful construction of the BSRI that indicates high internal consistency, discriminant validity and test-retest reliability.[34]

Statistical Analysis

Initially Chi square analysis was completed on the dicotomized variables. One-way analysis of variance was completed on the biological sex variable for both interpersonal attraction variables and communication behavior variables. Two-way analysis of variance was completed on the social-task variable and in the psychological sex variable. If significance occurred

among group, the Scheffé procedure was used to determine between which sets of means the significance occurred. Multivariate statistics were not computed on the variables because of the extreme differences in cell sizes. Each group member rated other members of the group on dimensions of interpersonal attraction.

Results

The results as revealed in Table 1 indicate that no significant differences occurred between biological males and females in rating who contributed more to the social climate and who contributed more to the task of the group. No within group differences existed for the male group on the dependent variables, but females' frequencies varied significantly proclaiming that they contributed more to the social climate than the task climate of the group.

More significant differences occurred when psychological sex was used as an independent variable. Significant psychological sex differences occurred for both biological sex groups and the composite group in rating who contributed more to the task.

Significant psychological sex differences also occurred on the female groups and the composite group in listing the class members they preferred to help solve a problem and person with whom they preferred to socialize.

Tables 2, 3, and 4 report the means on each interval dependent variable. The composite means for the biological and psychological sex variables are based on how group members were rated by other members on the interpersonal attraction dimensions. The differences between the means on the biological sex groups were quite small. Much variation, however, exists

for the psychological sex groups. These between and among groups variations will be explained and interpreted as the results of the research are reported and discussed. The following symbols are used to label psychological sex groups: NM = Male Masculine, MF = Male Feminine, MU = Male Undifferentiated, MA = Male Androgynous, FM = Female Masculine, FF = Female Feminine, FU = Female Undifferentiated and FA = Female Androgynous.

In Table 4 the differences between sexes on the dependent variables show females (1) rated partners significantly more task attractive, (2) stated more social-emotional positive comments, (3) stated more task giving comments, and (4) made more task questions than male participants in the study.

Next, contributions to the social and task areas were used as dicotomized independent variables. Tables 5 and 6 report that group members who indicated that they contributed more to the task rated partners lower on the three interpersonal attraction dimensions, stated significantly more social-emotional positive comments, task questions and contributed more comments to the discussion. Participants who indicated they contributed more to the social climate contributed more social-emotional positive comments and task-giving comments, and their partners contributed more social-emotional negative comments.

Post hoc analysis using the Scheffè procedure was completed to determine between which groups of means significance occurred.* These results indicate

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*Ferguson points out that the Scheffé method is more rigorous than other multiple comparison methods with regard to the Type 1 error and will lead to fewer significant differences. Because of this, the investigator may choose to employ a less rigorous significance level. That is, the .10 level may be used instead of the .05. See George Ferguson, Statistical Analysis in Psychology and Education, (New York, New York: McGraw-Hill Book Co.) 1966 pp. 296-299.

that members who report they contributed more to the social climate rated partners higher on task attraction than members who rated that their partners contributed more to the social climate.

In Table 7 psychological sex (same and different) are used as catagorical, independent variables. The results revealed that significant differences occurred among levels of psychological sex for the main effects of both independent variables in rating task attraction. The Scheffé procedure again was used to determine among which levels significance occurred. The results revealed that both androgynous and masculine subjects rated members of different psychological sexes significantly lower than psychologically feminine and undifferentiated subjects. In addition, masculine and feminine subjects rated members of the same psychological sex significantly different than other psychological sex groups (see Table 8).

The results for the communication behavior variables revealed that there were significant differences among groups on task-giving and composite comments (see Table 9). In Table 10 the Scheffé procedure again was used to determine differences between psychological sex groups. The results revealed significant differences between androgynous and other psychological sex groups on task giving and composite comments. In addition, masculine subjects made more task-giving comments and composite comments than feminine subjects.

Post hoc analysis was completed to determine relationships between speaking apprehension scores, listening apprehension scores, composite interpersonal attraction dimension scores, psychological sex scores, and communication behavior scores. The correlational analysis reported in Table 11 reveal both significant positive and negative correlations. The results will be amplified in the discussion section.*

Discussion

An interpretation of the results of this study indicate differences between and among groups on the independent variables: biological sex, psychological sex, task and social variables. The results will be discussed for each research question.

The chi square analysis of the biological sex variable confirms past research by Hilpert et al. completed at the college level. It also reveals much within sex variability in rating who contributed more to the social climate and to the task of the group and indicates that biological sex is not a good discriminating variable. Females, however, did indicate that they contributed more to the social aspects than to the task aspects of the discussion. Thus, this adds support to Bales' previous research.

The psychological sex variable, however, adds new insights to previous research as it points out that androgynous and masculine subjects for both biological sex groups contend that they contributed more to the task of the group. These results point out that psychological sex is a more discriminating variable than biological sex. The results of the questions focusing on the (1) individual in the class with whom you would most like to work on a task and (2) the individual with whom you would most like to

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* (from page 14) The decision to include Personal Report of Communication Apprehension and Receiver Test in the correlational analysis was decided after rereading McCroskey, et al. Pearson product moment correlation coefficients were computed variables as there were not enough subjects to justify more rigorous statistics: canonical correlation or stepwise multiple regression.

socialize also produced significant results. The results indicate that many from all psychological sexes preferred working with androgynous or feminine persons. More members preferred to socialize with feminine subjects. In addition for both male and female groups, a greater percentage selected their own psychological sex as the group to work and to socialize with. This indicates that psychological sex personality type is a key variable in both working and social situations. The means for the communication behavior variables, reported in Tables 2 and 3, also reveal the advantages of psychological sex over biological sex as categorical independent variables. Data snooping also reveals that psychological feminine subjects and undifferentiated subjects rated other group members higher on task attraction than other psychological groups.

The results of the biological sex variable on the eight dependent variables revealed that females rated males significantly higher on task attraction, stated more social-emotional positive comments, task-giving comments and task-asking comments. Previous research by McCroskey and McCain did not attempt to determine if females would rate other group members higher on task attraction, but Bales' research confirms that females stated more social-emotional positive comments. Previous research also does not conclude that females would state more task-giving and task-asking comments. There may be three possible reasons why these results occurred in this study. First, more females participated in the discussion, outnumbering males three to one. As a result the females may have felt more at ease during the discussion. Second, because members within the classes had participated in a number of group activities, close personal relationships may have developed during the other exercises. Third, females may

be more mature than males at the senior high school level as 37% of the females were androgynous, whereas 20% of the males were androgynous. Based on these findings it may be that males at this stage of cognitive development are more apt to stereotype interpersonal attraction dimensions. Finally, these conclusions should be viewed with caution as there was high within group variance on the rating of interpersonal attraction dimensions of partners and comments made during the discussion. These findings prohibit the generalizability of the results for the biological sex variable.

The analysis of the social and task variables confirms that members who contributed more to the social climate of the group stated more social-emotional positive comments. Likewise, participants who revealed that they contributed more to the task stated more task-giving and task-asking comments. Other results reveal that (1) approximately 70% rated themselves as contributing more to both the social and task areas, and (2) those who rated self as contributing more to the social climate rated partners lower on social attraction and physical attraction. This analysis plus that reported in the results section support the contention that high school subjects were honest in making assessments of self and partners. This also shows a conceptual link between ratings of interpersonal attraction dimensions and communication behavior variables. Members who rated partners as contributing more to the social and task areas did contribute less to the discussion than those who indicated that they had contributed more than patners to the social and task areas.*

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*Because of the time factor in completing the study and because of the low N in various cells, more rigorous analysis of variance techniques were not employed in the study.

An examination of the means in Tables 2 and 3 reveals that psychological sex is a better discriminating variable than biological sex. As reported in the result section, androgynous subjects, both male and female, were rated higher on interpersonal attraction dimensions regardless of the psychological sex of partners. Androgynous subjects also stated more social-emotional positive comments, task-giving and task-asking comments and contributed more to the discussion. These results add support to the Bem instrument as androgynous subjects should be a blend of both positive characteristics of males and females. That is, androgynous subjects should be assertive, task-oriented, etc. and also sensitive, person-oriented, etc. These results also support that androgynous subjects have greater behavioral flexibility in communicating in small groups.

The post hoc correlational analyses utilizing various dimensions of psychological sex, interpersonal attraction, communication behavior, and communication apprehension were completed to determine relationships among these variables. The results revealed significant positive relationships among masculine sources, task attraction scores, task-giving scores, task-asking scores, and negative correlations among the variables and speaking and listening apprehension scores. These results reveal close relationships between attitudinal and behavioral variables. The results also may reveal that clusters of variables may relate to each other. That is if more subjects were utilized in this study, multivariate statistics may reveal that relationships among psychological sex scores, interpersonal attraction scores, and communication behavior scores are significantly related.

Future Research

This was an exploratory study in two respects. First, psychological

sex was used as an independent variable in small group research. Second, high school students were used as subjects in the study. The results definitely point out the advantages of psychological sex over biological sex as a discriminating variable on interpersonal attraction dimensions and communication behavior variables.

Based on the results of the study, additional investigations are needed to better understand communication behaviors of various psychological sex groups. That is, in this study only subjects within a classroom unit could be assigned as participants of a particular group. For example, although there were variations of levels of psychological sex grouping, such as two androgynous and three feminine, it was impossible, because of the limited number of subjects within the classroom units, to have homogeneous groups consisting of all androgynous subjects, all masculine subjects, all feminine subjects or all undifferentiated subjects. More research is needed to determine if group members of various psychological sexes interact differently in various types of discussions. In addition, because students had participated in several discussions prior to this experiment, the researchers are uncertain as to how members of different psychological sexes would perform if they had not been exposed to group communication theory and previous activities. Likewise, biological sex could not be manipulated within psychological sex groups, such as groupings of all androgynous females, all androgynous males, etc. Future studies are needed in which a larger subject pool is available so that stratification techniques can be implemented.

Another study might focus on understanding change that occurs from one educational level to another. To track this change longitudinal, panel studies might be completed. In this fashion researchers could determine at what age participants move from one psychological sex category to another. For

example, at the senior high level, a majority of students are in the sex-typed or undifferentiated categories. If the BSRI was administered to the same subjects at the college level, investigators may discover that many undifferentiated subjects have moved to the masculine, feminine androgynous categories. As a result of the movement from one psychological sex category to another do participants perform differently in a small group communication situation. In addition, the panel study may reveal that students with certain demographic characteristics are more likely to move from the undifferentiated category to the androgynous category. As participants move from one psychological sex category to another, researchers can discover if they rate partners differently on interpersonal attraction dimensions and if their communication behaviors change.

Also, research is needed to determine relationships among homophily interpersonal attraction, psychological sex, unwillingness to communicate scale, and other attitudinal measures in reference to communication behaviors in small group situations.

In previous research Bem's instrument have proven to be reliable and valid. This study has revealed that the BSRI has utility in discriminating among psychological sex groups on interpersonal attraction dimensions and communication behavior variables.

FOOTNOTES

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[24]V. Eman and B. Morse, "A Multivariate Analysis of the Relationships Between Androgyny and Self-Esteem, Self-Acceptance, and Acceptance of Others," paper presented at the Speech Communication Association Convention, 1977, Washington, D. C.

[25]L. Greenblatt, J. Hasenauer, and V. Freimuth, "The Effects of Sex-Typing and Androgyny on Two Communication Variables: Self-Disclosure and Communication Apprehension," paper presented at the Speech Communication Association Convention, 1977, Washington, D. C.

[26]C. Montgomery and M. Burgoon, "An Experimental Study of the Interactive Effects of Sex and Androgyny on Attitude Change," Communication Monographs, 44 June 1977), 130-135.

[27]J. C. McCroskey and T. A. McCain, "The Measurement of Interpersonal Attraction, Speech Monographs, 52 (1974), 261-266.

[28]Velma Lashbrook, "Interaction Theory and Measurement," Human Communication Research, (Summer 1975), 308-315.

[29]James McCroskey, John Daly, Virginia Richmond and Barbara Cox, "Communication Apprehension and Interpersonal Attraction," Human Communication Research, 2 (Fall 1975), 57-66.

[30]Hilpert, et al., p. 58.

[31]Bales.

[32]Hilpert, et al.

[33]McCroskey and McCain.

[34]Bem, "The Measurement of Psychological Androgyny."

TABLE 1

Chi Square Analysis of Categorical Variables

Demographic Variable	Item	df	χ^2
Male/Female	Social	1	.143
Male/Female	Task	1	.704
Male	S/T	1	.466
Female	S/T	1	5.24**
Psychological sex (F)	Social	3	2.43
Psychological sex (F)	Task	3	12.30***
Psychological Sex (M)	Social	3	1.60
Psychological Sex (M)	Task	3	6.32*
Psychological Sex (C)	Social	3	.341
Psychological Sex (C)	Task	3	19.23****
Psychological Sex (F)	Solve Problem	9	27.47***
Psychological Sex (F)	Socialize	9	22.70***
Psychological Sex (M)	Solve Problem	9	8.937
Psychological Sex (M)	Socialize	9	2.731
Psychological Sex (C)	Solve Problem	9	19.36**
Psychological Sex (C)	Socialize	9	15.81*

* Significant at .1 level

** Significant at .05 level

*** Significant at .01 level

**** Significant at .001 level

Table 2

Biological Sex Means on Dependent Variables

Dependent Variable	Group 1	Group 2
Social Attraction	24.71	23.68
Physical Attraction	27.63	28.19
Task Attraction	26.31	30.17
Social Emotional-positive	4.88	6.006
Social Emotional-negative	1.150	1.035
Task - Giving information, suggestions, opinion	15.863	18.459
Task - Asking for information, suggestions, opinion	4.288	5.500
Composite	26.076	26.651

Table 3

Psycholigical Sex Means on Dependent Variables

Dependent Variable	MM	MF	MU	MA	FM	FF	FU	FA
Social Attraction	20.300	18.150	22.469	23.125	21.643	21.250	21.842	21.300
Physical Attraction	21.615	20.500	24.297	22.800	23.678	24.264	23.842	23.793
Task Attraction	23.075	22.500	25.156	24.700	28.678	25.147	27.540	24.971
Social Emotional-positive	2.950	4.700	5.156	9.100	3.500	5.029	4.632	7.514
Social Emotional-negative	3.850	.600	.156	.350	1.607	.853	1.053	.871
Task - Giving information, suggestions, opinion	13.850	10.800	14.438	23.600	14.563	15.706	17.289	21.814
Task - Asking for information, suggestions, opinion	4.950	2.000	4.188	7.000	4.036	3.618	2.974	7.814
Composite	25.400	17.900	23.781	34.900	23.679	25.206	22.789	30.543

Composite ratings of each member on each interpersonal attraction dimension

Table 4

Analysis of Variance with Biological Sex as the Independent Variable

Independent Variable	Dependent Variable	F	P
Biological	Social Attraction	1.55	.21
Biological	Physical Attraction	.18	.56
Biological	Task Attraction	7.71	.006
Biological	Social Emotional-positive	57.46	.001
Biological	Social Emotional-negative	.45	.50
Biological	Task-Giving information, suggestions, opinion	3.88	.05
Biological	Task -Asking for information, suggestions, opinion	52.67	.001
Biological	Composite Comments	.23	.63

Table 5

2x2 Analysis of Variance with Social and Task Dimensions

Independent Variable	Dependent Variable	F	P
Social Dimension	Social Attraction	2.82	.09
Task Dimension		11.61	.001
SXT Interaction		.23	.63
Social Dimension	Physical Attraction	4.57	.03
Task Dimension		7.71	.006
SXT Interaction		.56	.45
Social Dimension	Task Attraction	2.01	.15
Task Dimension		20.68	.001
SXT Interaction		5.98	.01
Social Dimension	Social Emotional -	2.27	.13
Task Dimension	positive	4.76	.03
SXT Interaction		.19	.65
Social Dimension	Social Emotional -	3.37	.06
Task Dimension	negative	.48	.48
SXT Interaction		1.73	.18
Social Dimension	Task - Giving	3.08	.08
Task Dimension	information,	2.08	.15
SXT Interaction	suggestions, opinion	.25	.61
Social Dimension	Task- Asking for	.28	.59
Task Dimension	information,	10.68	.001
SXT Interaction	opinions, suggestions	.03	.90
Social Dimension	Composite Comments	1.11	.29
Task Dimension		6.39	.01
SXT Interaction		2.48	.11

Table 6

Scheffe Test for Social-Task Variables

Dependent Variable	Comparison Levels	F	P
Task Dimension	PS vs I	24.69	.001
	PS vs PT	26.30	.001
	PS vs IT	46.83	.001
	IS vs PT	16.55	.001
	IS vs IT	13.67	.001
	PT vs IT	14.80	.001

PS = Partner Social
IS = I Social
PT = Partner Task
IT - Partner Task ?

Table 7

2x2 Analysis of Variance with P sychological Sex - Same and Different

Independent Variable	Dependent Variable	F	P
Same	Social Attraction	.99	.39
Different		.43	.72
SXD Interaction		1.08	.38
Same	Physical Attraction	1.06	.36
Different		1.77	.15
SXD Interaction		.84	.57
Same	Task Attraction	3.49	.01
Different		3.75	.01
SXD Interaction		.79	.69

Table 8

Scheffe Procedure for Psychological Sex Variable

Independent Variable	Dependent Variable	Comparison Level	F	P
Same (rating group members of various psycholigical sexes)	Task Attraction	M vs F	4.64	.05
		M vs U	7.32	.01
		A vs F	4.73	.05
		A vs U	3.51	.10
Different (rating group members of the same psychological sex)		M vs U	3.34	.10
		F vs A	3.88	.10
		F vs U	5.74	.05

Table 9

Analyses of Variance with Psychological Sex as the Independent Variable

Independent Variable (N=	Dependent Variable	F	P
Psychological Sex	Social Emotional Positive	1.517	.20
Psychological Sex	Social Emotional Negative	1.363	.20
Psychological Sex	Task-Giving Information Suggestions, Opinions	2.758	.05
Psychological Sex	Task-Asking for Information, Suggestions Opinion	1.834	.20
Psychological Sex	Composite	4.779	.01

Table 10

Scheffé Tests for Psychological Sex Variable

Independent Variable	Dependent Variable	Comparison Level	F	P
Psychological Sex	Task Giving	M vs A	6.11	.10
		F vs A	6.29	.10
		U vis A	7.48	.10
Psycholgical Sex	Composite	M vs F	9.61	.05
		F vs A	12.74	.05
		U vs A	10.37	.05

Table 11

Correlational Analyzes Among Psychological Sex Variables, Interpersona Attraction Variables, Communication Apprehension Variables, Communication Behavior Variables

	Variables											
	M	F	S.D.	SA	PA	TA	PRCA	RAT	SP	SN	TG	TA
M (Psychological Sex)		.38	.17	.31**	.04	.58***	-.41	-.23*	.31**	-.09	.42**	.47***
F			.13	.46***	.11	.18	.38**	.14	.21	-.05	.13	.19
SD				.12	.06	.19	.32**	.18	-.12	.04	-.19	.13
SA (Interpersonal Attraction)					.18	.42***	-.18	.37**	.32**	-.15	.28*	.14
PA						.31**	-.16	-.14	.06	.14	.18	.04
TA							-.46***	-.31**	.29*	-.07	.61***	.64***
PRCA (Communication Apprehension)								.32**	.08	.02	-.31**	-.47
RAT									-.09	-.02	.06	.09
SP (Communication Behavior)										-.09	.39***	.46
SN											-.38**	-.29*
TG												.48***
TA												

* = Significant at .05 level
** = Significant at .01 level
*** = Significant at .001 level

M = Masculine
F = Feminine
BD = Social Desirability
SA = Social Attraction
PA = Physical Attraction
TA = Task Attraction

PRCA = Personal Report of Communication Apprehension
RAT = Receiver Apprehension Test
SP = Social Emotional Positive
SN = Social Emotional Negative
TG = Task Giving
TA = Task Asking

APPENDIX A

Items on the Masculinity, Femininity, and Social Desirability Scales of the BSRI

Masculine items	Feminine items	Neutral items
Acts as a leader	Affectionate	Adaptable
Aggressive	Cheerful	Conceited
Ambitious	Childlike	Conscientious
Analytical	Compassionate	Conventional
Assertive	Does not use harsh language	Friendly
Athletic	Eager to soothe hurt feelings	Happy
Competitive	Feminine	Helpful
Depends own beliefs	Flatterable	Inefficient
Dominant	Gentle	Jealous
Forceful	Gullible	Likable
Has leadership abilities	Loves children	Moody
Independent	Loyal	Reliable
Individualistic	Sensitive to the needs of others	Secretive
Makes decisions easily	Shy	Sincere
Masculine	Soft spoken	Solemn
Self reliant	Sympathetic	Tactful
Self-sufficient	Tender	Theatrical
Strong personality	Understanding	Truthful
Willing to take a stand	Warm	Unpredictable
Willing to take risks	Yielding	Unsystematic

Decision Making:

One evening a year from now, you invite eight friends to your home to talk with a psychology professor you know personally. In the midst of the discussion, you hear an air raid siren. You turn on the radio and the Civil Defense station broadcasts that enemy planes are approaching the area. Fortunately, you have a well-equipped bomb shelter in your basement. You direct your guests and a mechanic who has been repairing the air conditioning unit to go into the shelter. Shortly after you assemble in the shelter, a terrific blast shakes the earth. The bomb has fallen. For four hours, you get nothing but static on the radio. Then you hear a dramatic announcement: "A bomb of great magnitude has hit the city. Damage is extensive; radiation is intense. It is feared that all persons not in shelters have suffered fatal injuries or received excessive doses of radiation. All persons in shelters are warned that it will be fatal to leave before one month has passed. Further bombing is anticipated. This may be the last broadcast you will receive for some time.

You realize you have eleven persons in a shelter equipped with food, water, and oxygen. This supply of necessary items will last these eleven people for two weeks -- or last six persons for a month. The group decides that to survive for one month, five people must leave the shelter and face probable death outside. All agree that you (since the shelter is yours) may remain. You will also choose the other five who will remain. Obviously, you must choose the five who will face certain death once they leave the shelter.

In making your decision, keep four things in mind: 1. Accept this hypothetical situation as fact; 2. Concern for yourself in choosing your companions; 3. Please remember you must remain; 4. Accept all facts concerning the people in the shelter.

List the six people who will remain:

1. Yourself
2. _____
3. _____
4. _____
5. _____
6. _____

List the five people who will leave:

1. _____
2. _____
3. _____
4. _____
5. _____

Biographical Sketch of Eleven Persons:

1. Yourself.
2. Mary, the psychology professor, is a few years older than the rest of the group. The others respect her and recognize her grasp of the situation and her ability to take control. Although she is rather cold and impersonal, she had helped to quiet the group's nervousness and has already settled an argument between two people. Even though no one seems to be close to her, you feel she would be valuable as an organizer and pacifier.

3. Hazel is studying nutrition and dietetics. She is attractive. One of the things she did was to appraise the food supply. You realize her training has given her practical knowledge of how to ration food to avoid waste. She is an imaginative cook who can fix food appealingly. She is efficient to the point of being domineering and bossy.
4. Alberta is a brilliant girl who has been given a graduate assistantship to do research on radiation. She has been pampered all her life and is horrified at wearing the same clothes for a month, being unable to take a bath or wash her hair, and sleeping in a room with five other people. Her scientific knowledge of the situation would be a definite asset. Her whims and attitudes would be difficult to live with.
5. Laura is a literature major, has read extensively, and writes well. She has entertained and diverted the group by retelling one of the books she recently read.
6. Nancy has a pleasant personality. However, she has been the most nervous and upset of the group. Her temperamental, excitable mood is partially due to the fact that she is expecting a baby in two months.
7. Chet, a medical student, is Nancy's husband. He has had two years of medical study, three years as a campus medical director, and has close association with his father who is also a doctor. You realize he would be a great aid. However, he refuses to stay unless his wife also remains.
8. Jack is the mechanic who was working on the air conditioning unit. He has practical knowledge. His formal education ended with high school. He does understand air filtration systems, air purifiers, and oxygen supply. He is rather dull and chubby. He has already been reprimanded by Hazel for taking a candy bar from the limited food supply. Despite his understanding of the technical aspects, he fails to grasp the necessity for self-control.
9. Paul is a young minister and is easygoing. His calmness, optimism, and faith are an inspiration for the group. His presence is reassuring. He helped Nancy restrain her tearful outburst. At this time, he revealed he has learned to remain calm because he is a diabetic. He requires a special diet and becomes tired easily. Excitement causes him to faint.
10. Joe is a clean-cut, husky Negro football player. He is highly respected. He performed the heavy work of lifting the metal plate that had to be placed over the shelter door.
11. Don is romantic. He gets along well, especially with the girls. He plays the guitar and sings well. He has offended Hazel by being fresh.

Social-Emotional Area: Positive Reactions	A	1	Shows solidarity, raises other's status gives help, reward
		2	Shows tension release, jokes, laughs shows satisfaction
		3	Agrees, shows passive acceptance, understands, concurs, complies
Task Area: Attempted Answers	B	4	Gives suggestion, direction, implying autonmy for other
		5	Gives opinion, evaluation, analysis expresses feeling, wish
		6	Gives orientation, information, repeats, clarifies, confirms
Task Area: Questions	C	7	Asks for orientation, information, repetition, confirmation
		8	Asks for opinion, evaluation, analysis, expression of feeling
		9	Asks for suggestion, direction, possible ways of action
Social-Emotional Area: Negative Reactions	D	10.	Disagrees, shows passive rejectiom, formality, withholds help
		11	Shows tension, asks for help, withdraws out of field
		12	Shows antagonism, deflates other's status, defends or asserts self

Bales' interaction process categories

Appendix D

Name _____

Name of Partner _____

Please answer the following questions:

1. Did you or your partner contribute more to the feeling of trust and friendship?

   I did _____ My partner did_____

2. Did you or your partner contribute more to the solution you generated?

   I did _____ My partner did _____

These questions apply to your partner in the communication event. Please indicate your level of agreement or disagreement with the following statements. (7) very strongly agree, (6) strongly agree, (5) agree, (4) undecided, (3) disagree, (2) strongly disagree, (1) very strongly disagree.

* 1. _____ I think he (she) could be a friend of mine.

2. _____ I sometimes wish I were more like him (her).

* 3. _____ I would like to have a friendly chat with him (her).

4. _____ I don't care if I ever get to meet him (her).

* 5. _____ It would be difficult to meet and talk with him (her).

6. _____ He (She) is persoanlly offensive to me.

* 7. _____ We could nenver establish a personal friendship with each other.

8. _____ He (She) would be pleasant to be with.

* 9. _____ He (She) just wouldn't fit into my circle of friends.

10. _____ I feel I know him (her) personally.

11. _____ He (She) would be fun to work with.

* 12. _____ I think he (she) is quite handsome (pretty).

13. _____ He (she) is repulsive to me.

* 14. _____ I couldn't get anything accomplished with him (her).

15. _____ If we put our heads together, I think we could come up with some pretty good ideas.

* 16. _____ He (she) is very sexy looking.

17. _____ He (She) is well groomed.

* 18. _____ He (She) is a typical goof-off when assigned a job to do.

19. _____ I have a feeling that he (she) is a very slow worker.

* 20. _____ I don't like the way he (she) looks.

21. _____ You can count on him (her) getting the job done.

22. _____ He (She) is not very good looking.

* 23. _____ If I wanted to get things done, I could probably depend on him (her).

24. _____ The clothes he (she) wears are not becoming.

* 25. _____ He (She) would be a poor problem solver.

* 26. _____ I find him (her) very attractive physically.

27. _____ I think studying with him (her) would be impossible.

* 28. _____ He (She) is somewhat ugly.

* 29. _____ I have confidence in his (her) ability to get the job done.

30. _____ He (She) wears neat clothes.

* McCroskey and McCain's fifteen items.